

ABSTRACT OF THE DISCLOSURE

An optical sheet that accepts light transmitted at or within a specific entrance cone angle that then redirects and transmits the light within an exit cone that is substantially normal to the sheet's plane. The intensity of the light within the exit cone is substantially uniform for any light source entering the sheet within the sheet's acceptance angle. The optical sheet is made of transparent material with microlens arrays formed on its opposite front and back surfaces. The thickness of the optical sheet is sufficient so that the microlens on the opposite surfaces are separated a distance equal to the microlens focal length, with each microlens on the front and back surfaces having substantially similar size and shape, with centers transversely aligned. When used with one or more light sources located on one surface, the transmitted light through the optical sheet is uniform in intensity across a second surface. When used with a second optical sheet, aligned parallel to the first optical sheet, the transmitted light is uniform across and throughout angles within the exit cone at a second surface. An economical method of manufacturing the optical sheet is also provided.